

Computer Science

Degree Type

Associate of Science

Program Description

The Associate of Science in Computer Science program at Pennsylvania Highlands Community College is a comprehensive two-year curriculum designed to equip students with a solid foundation in various computer science disciplines. The program begins with introductory courses in programming, software engineering, and mathematics, followed by a focus on object-oriented programming, data structures, and algorithms. Subsequent semesters delve into various programming languages, and operating system development. Elective courses such as history of computers, mobile programming, and database development allow students to tailor their education to specific interests. The program engages students with hands-on experience in collaborative software development. The inclusion of general education requirements ensures a well-rounded education, while ongoing collaboration with local industry leaders helps align the curriculum with the evolving needs of the regional tech sector.

Career Opportunities

Graduates of this program will be prepared for transfer to a four-year program.

Program Objectives

Upon completion of the program, the student will be able to:

1. Understand and be proficient in the use of software development processes to design and develop software and solve problems in computer science.
2. Understand and be able to apply the underlying principles of computer science and computer architecture to a variety of problem domains.
3. Demonstrate proficiency in computing and mathematical theoretical concepts at the calculus level and apply these concepts to computing problems.

Obtaining the Degree

To earn the Associate of Science degree, students must:

- Be admitted to the program as a matriculated student. Matriculation is restricted to those students who are suitably prepared in the areas of English, mathematics, and reading as measured by placement exemption or examination. A strong background in high school mathematics (at least pre-calculus) and sciences is preferred.
- Satisfactorily complete all degree requirements, including General Education Requirements and Major Requirements.

General Education Requirements

Course Code	Title	Credits
FYE 101	First Year Experience	1
COM 101	Public Speaking	3
ENG 110	English Composition I**	3
ENG 200	English Composition II: Studies in Literature**	3
MAT 210	Calculus I	4
	Elective - Social Science	3
	Elective - Value & Ethics	3
	Elective - Humanities	3

Social Science Electives

(Choose One)

Course Code	Title	Credits
ANT 100	Introduction to Cultural Anthropology**	3
ECO 100	Macroeconomics	3
ECO 110	Microeconomics	3
HIS 100	U.S. History I: Discovery through Reconstruction**	3
HIS 110	U.S. History II: Reconstruction to Present**	3
CIV 100	Western Civilization: Ancient through Renaissance**	3
CIV 110	Western Civilization: Renaissance to Present**	3
GOV 100	Introduction to American National Government**	3
PSY 100	General Psychology**	3
SOC 100	Introduction to Sociology**	3

Values and Ethics Electives

Students must select one course to meet the Value and Ethics requirement. The selected course may not meet any other program or general education requirement.

Course Code	Title	Credits
AST 100	Introduction to Astronomy	3
BUS 130	Personal Consumer Finance	3
CIV 100	Western Civilization: Ancient through Renaissance**	3
CIV 110	Western Civilization: Renaissance to Present**	3
CIV 200	Ancient Rome and the Barbarians	3
ENG 105	Effective Writing for the Workplace	3
ENG 215	Creative Writing	3
ENG 220	Business Letter and Report Writing	3
ENG 225	Technical Writing	3
ENG 235	Survey of American Literature II	3
ENG 245	Survey of British Literature II	3
ENV 110	Introductory Environmental Science	3
	GLG 102 and GLG 103	4
GOV 100	Introduction to American National Government**	3
GOV 210	Current Events and Public Policy Issues	3
HIS 100	U.S. History I: Discovery through Reconstruction**	3
HIS 110	U.S. History II: Reconstruction to Present**	3
HIS 205	American Popular Culture	3
HIS 210	The Civil War and Reconstruction	3
HIS 215	History through Film	3
HIS 250	World War II through Film	3
LIF 111	Health and Wellness	3
PHI 100	Critical Thinking	3
PHI 110	Introduction to Philosophy**	3
PHI 200	Introduction to Ethics	3
REL 100	World Religions/Religious Studies	3
REL 200	Understanding the Bible	3

Science Electives

Must be a 4-credit lab course; work with a transfer counselor at your receiving college

Course Code	Title	Credits
	BIO 104 and BIO 114	4
	BIO 106 and BIO 116	4
	BIO 202 and BIO 212	4
	BIO 204 and BIO 214	4
CHM 106	Introductory Chemistry	4
CHM 120	General Chemistry I	4
	PHY 110 and PHY 111	4

Humanities Electives

(Choose One)

Course Code	Title	Credits
ART 101	Introduction to Art History**	3
MUS 100	Introduction to Music	3
PHI 110	Introduction to Philosophy**	3

Major Requirements

Course Code	Title	Credits
	CIT 132 or CIT 173	3-4
	CIT 222 or CIT 237	3
CSC 121	Introduction to Software Engineering	3
CSC 126	Programming I	3
CSC 206	Programming II: Object-Oriented Programming	3
CSC 211	Survey of Programming Languages	3
CSC 215	Data Structures	3
CSC 220	Computer Organization and Architecture	4
MAT 204	Discrete Mathematics	3
MAT 220	Calculus II	4
	Total Credits	55-56

Course Sequencing

Fall 1

Course Code	Title	Credits
FYE 101	First Year Experience	1
CSC 121	Introduction to Software Engineering	3
CSC 126	Programming I	3
ENG 110	English Composition I**	3
MAT 210	Calculus I	4

Spring 1

Course Code	Title	Credits
ENG 200	English Composition II: Studies in Literature**	3
MAT 200	Probability and Statistics	3
COM 101	Public Speaking	3
CSC 206	Programming II: Object-Oriented Programming	3
	Elective - Social Science	3

Fall 2

Course Code	Title	Credits
CSC 211	Survey of Programming Languages	3
	CIT 132 or CIT 173	3-4
MAT 204	Discrete Mathematics	3
	Elective - Science (4 credits)	4
	Elective - Humanities	3

Spring 2

Course Code	Title	Credits
	CIT 222 or CIT 237	3
CSC 215	Data Structures	3
CSC 220	Computer Organization and Architecture	4
	Elective - Science (4 credits)	4
	Elective - Value & Ethics	3